

above-mentioned amino acid residue in a sequence having at least 70% homology to SEQ ID NO:1,

wherein said at least one amino acid residue is selected from the group consisting of:

the 11th Tyr, 16th Glu, 49th Asn, 84th Glu, 144th Ser, 167th Gln, 169th Tyr, 178th Ala, 188th Glu, 190th Asn, 205th His and 209th Gln, and

said mutant α -amylase possesses increased heat resistance and maintains resistance to chelating agents when compared to SEQ ID NO:1, and

said mutant α -amylase comprises an amino acid sequence which is at least 70% homologous to SEQ ID NO:1.

5. (Twice Amended) A mutant α -amylase obtained by introducing two kinds of mutations into SEQ ID NO:1 or an amino acid sequence having at least 70% homology to SEQ ID NO:1,

wherein a first mutation is a substitution or a deletion of at least one amino acid residue selected from the group consisting of the 11th Tyr, 16th Glu, 49th Asn, 84th Glu, 144th Ser, 167th Gln, 169th Tyr, 178th Ala, 188th Glu, 190th Asn, 205th His and 209th Gln, and

wherein a second mutation is a substitution of a sequence corresponding to 11 to 100 amino acid residues from the amino terminus of the amino acid sequence set forth in SEQ ID NO:1, and

wherein said mutant α -amylase possesses increased heat resistance and maintains resistance to chelating agents when compared to SEQ ID NO:1.

6. (Twice Amended) The mutant α -amylase according to Claim 5, wherein said first mutation comprises:

the substitution of an amino acid residue selected from the group consisting of: the 11th Tyr of SEQ ID NO:1 with Phe, the 16th Glu of SEQ ID NO:1 with Pro, the 49th Asn of SEQ ID NO:1 with Ser, the 167 Gln of SEQ ID NO:1 with Glu, the 169th Tyr of SEQ ID NO:1 with Lys, the 190th Asn of SEQ ID NO:1 with Phe, the 205th His of SEQ ID NO:1 with Arg, and the 209th Gln of SEQ ID NO:1 with Val,

and wherein said second mutation comprises:

substituting an amino terminal sequence from 1st Asp through 19th Gly of SEQ ID NO:1 with an amino acid sequence from 1st His to 21st Gly of SEQ ID NO:2.

Please add the following claim:

--11. A mutant α -amylase obtained by introducing two kinds of mutations into SEQ ID NO:1 or an amino acid sequence having at least 70% homology to SEQ ID NO:1,

wherein said first mutation consists of:

D3 the substitution of an amino acid residue selected from the group consisting of: the 11th Tyr of SEQ ID NO:1 with Phe, the 16th Glu of SEQ ID NO:1 with Pro, the 49th Asn of SEQ ID NO:1 with Ser, the 167 Gln of SEQ ID NO:1 with Glu, the 169th Tyr of SEQ ID NO:1 with Lys, the 190th Asn of SEQ ID NO:1 with Phe, the 205th His of SEQ ID NO:1 with Arg, and the 209th Gln of SEQ ID NO:1 with Val,

and wherein said second mutation consists of:

substituting an amino terminal sequence from 1st Asp through 19th Gly of SEQ ID NO:1 with an amino acid sequence from 1st His to 21st Gly of SEQ ID NO:2.--

Attached hereto is a marked-up version showing the changes made to the application by these amendments.